

WHAT IS CLAIMED IS:

1 1. A congestion control method for a network comprising:
2 a mobile user terminal located in a mobile network; a contents
3 server for providing a contents service in the Internet; and a
4 GW (gateway) server used as a repeater in the case where access
5 is made from the mobile network to the Internet, wherein

6 association identifiers for identifying, as the flow of a
7 series of services, screen informations ranging from
8 information in a service top menu to supply information in
9 contemplated service are imparted to respective screen
10 informations in a tree structure constituting a web service
11 provided by the contents server, and

12 upon the occurrence of congestion, priority connection
13 control of the service being in connection is performed based
14 on the association identifiers.

1 2. The congestion control method according to claim 1,
2 wherein

3 the association identifiers are constituted respectively
4 by identifiers representing "start," "continue," and "end,"

5 upon the occurrence of congestion in the GW server, the
6 GW server judges the association identifier contained in the
7 screen information to be relayed, and

8 for a request for the connection of a service provided
9 with an association identifier representing "continue," the
10 relay of the transfer of service information is continued until
11 an association identifier representing "end" appears, while for

12 a request for the connection of a service provided with an
13 association identifier representing "start," the connection is
14 cut off.

1 3. The congestion control method according to claim 1 or
2 2, wherein

3 the association identifiers are constituted respectively
4 by identifiers representing "start," "continue," and "end,"

5 upon the occurrence of congestion in the contents server,
6 the contents server judges the association identifier contained
7 in the screen information to be supplied, and

8 for a request for the connection of a service provided
9 with an association identifier representing "continue," the
10 relay of the transfer of service information is continued until
11 an association identifier representing "end" appears, while for
12 a request for the connection of a service provided with an
13 association identifier representing "start," the connection is
14 cut off.

1 4. The congestion control method according to any one of
2 claims 1 to 3, wherein

3 the Internet is connected to a public telecommunication
4 network through a telephony service server,

5 association identifiers for identifying, as the flow of a
6 series of services, screen informations ranging from
7 information in a service top menu to supply information in
8 contemplated service are imparted to respective screen
9 informations in a tree structure constituting a web service

10 provided by the telephony service server, and
11 upon the occurrence of congestion, priority connection
12 control of the service on connection is performed based on the
13 association identifiers.

1 5. The congestion control method according to claim 4,
2 wherein
3 the association identifiers are constituted respectively
4 by identifiers representing "start," "continue," and "end,"
5 upon the occurrence of congestion in the telephony
6 service server, the telephony service server judges the
7 association identifier contained in the screen information to
8 be supplied, and
9 for a request for the connection of a service provided
10 with an association identifier representing "continue," the
11 transfer of service information is continued until an
12 association identifier representing "end" appears, while for a
13 request for the connection of a service provided with an
14 association identifier representing "start," the connection
15 is cut off.

1 6. A congestion control system for a network comprising:
2 a mobile user terminal located in a mobile network; a contents
3 server for providing a contents service in the Internet; and a
4 GW (gateway) server used as a relay device in access from the
5 mobile network to the Internet, wherein
6 association identifiers for performing the priority
7 connection control of a service being in connection upon the

8 occurrence of congestion are imparted respectively to screens
9 of a tree structure constituting a web service provided by the
10 contents server.

1 7. The congestion control system according to claim 6,
2 wherein the GW server has the function of judging the
3 association identifiers, contained in the screen information,
4 as a series of service elements and the function of performing
5 the priority connection control of a service being in
6 connection upon the occurrence of congestion in the GW server.

1 8. The congestion control system according to claim 6,
2 wherein the contents server has the function of judging the
3 association identifiers, contained in the screen information,
4 as a series of service elements and the function of performing
5 the priority connection control of a service being in
6 connection upon the occurrence of congestion in the contents
7 server.

1 9. The congestion control system according to any one of
2 claims 6 to 8, wherein

3 a telephony service server for connecting the Internet to
4 a public telecommunication network is provided,

5 association identifiers for performing the priority
6 connection control of a service being in connection upon the
7 occurrence of congestion are imparted respectively to screens
8 of a tree structure constituting a web service provided by the
9 telephony service server, and

10 the telephony service server comprises: means for judging
11 the association identifiers, contained in the screen
12 information, as a series of service elements; and means for
13 performing the priority connection control of a service being
14 in connection upon the occurrence of congestion in the
15 telephony service server.

1 10. The congestion control system according to any one of
2 claims 7 to 9, wherein

3 the association identifiers are constituted respectively
4 by identifiers representing "start," "continue," and "end,"

5 upon the occurrence of congestion, for a request for the
6 connection of a service provided with an association identifier
7 representing "continue," the means for performing the priority
8 connection control of a service being in connection continues
9 the transfer of service information until an association
10 identifier representing "end" appears, while for a request for
11 the connection of a service provided with an association
12 identifier representing "start," the means for performing the
13 priority connection control of a service on connection cuts off
14 the connection.

1 11. The congestion control system according to claim 6,
2 wherein

3 the GW server has a user access management function, a
4 congestion state management function, a service association
5 identifier management function, and an association identifier
6 management function, and

7 upon the receipt of a request from the mobile user
8 terminal for access, the user access management function
9 inquires of the congestion state management function about
10 whether or not GW is in the state of congestion and, when GW
11 has been found to be congested, refers to the association
12 identifier management table through the service association
13 identifier management function to judge whether or not the
14 request from the mobile user terminal for access is related to
15 the service being continued, and, based on the results of
16 judgment, decides whether the request for access is to be
17 accepted or is to be rejected.

1 12. The congestion control system according to claim 11,
2 wherein the association identifier management table comprises
3 an terminal ID, a service screen identifier, and an association
4 identifier, and

5 upon a request from the mobile user terminal for access,
6 the GW server catalogs ID of the mobile user terminal, the
7 identifier for the service screen of the accessed contents
8 server, and the association identifier through the service
9 association identifier management function into the association
10 identifier management table and updates the data of the
11 association identifier management table.

1 13. The congestion control system according to claim 12,
2 wherein, upon the receipt of a notice of the detection of the
3 congested state from the congested state management function,
4 the user access management function refers to the association

5 identifier management table through the service association
6 identifier management function, and, when the mobile user
7 terminal ID inquired of the association identifier management
8 table is not cataloged, or when the mobile user terminal ID
9 inquired of the association identifier management table is
10 present and, at the same time, the association identifier on
11 the requested service is "end," informs the user terminal that
12 the requested service is inaccessible due to congestion, while,
13 when the mobile user terminal ID inquired of the association
14 identifier management table is present and, at the same time,
15 the association identifier on the requested service is "start"
16 or "continue," the user access management function judges that
17 the requested service is related to the service being continued
18 which has priority in connection under congestion, followed by
19 a request to the contents server for the provision of service.

1 14. The congestion control system according to any one of
2 claims 11 to 13, wherein the congested state management
3 function judges the congested state based on the usage of CPU in
4 GW system.

1 15. The congestion control system according to claim 14,
2 wherein the user access management function accepts all
3 requests from the mobile user terminal for access until the
4 usage of CPU reaches a first threshold; when the usage falls
5 within the range of the first threshold to a second threshold,
6 the user access management function accepts only a request for
7 access wherein the association identifier is "start/continue";

8 and, when the usage exceeds the second threshold, the user
9 access management function rejects all requests.

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